

Clean Version of Pending Claims

*SUB E1*  
*D1*

98. (Amended) A method for cleaning semiconductor wafers comprising:

- (a) rotating a wafer in a processing chamber;
- (b) contacting a surface of the wafer with a heated aqueous solution and simultaneously contacting the wafer with ozone in an amount sufficient to create an oxidizing effect on the surface of the wafer to oxidize contaminants thereon; and
- (c) rinsing the surface of the wafer to remove oxidized contaminants from the surface thereof.

99. A method as defined in claim 98 wherein the aqueous solution is water.

100. A method as defined in claim 98 wherein the aqueous solution contains an acid.

101. A method as defined in claim 98 wherein the aqueous solution is sprayed onto the surface of the wafer to form a thin aqueous film thereon.

102. A method as defined in claim 98 wherein the aqueous solution is adjusted to a temperature sufficient to effect oxidation on the surface of the wafer.

103. A method as defined in claim 102 wherein the temperature of the solution is less than 200°C.

104. A method as defined in claim 98 wherein the ozone is injected into the processing chamber.

105. A method as defined in claim 98 wherein the ozone is admixed with a carrier gas.

106. A method as defined in claim 105 wherein the carrier gas is selected from the group consisting of oxygen, nitrogen, air and inert gas.

107. (Amended) A method for cleaning semiconductor wafers comprising:

- D2
- (a) spraying onto a rotating wafer a heated aqueous solution while simultaneously contacting the wafer with ozone to effect oxidation on the surface of the wafer; and
  - (b) rinsing the surface of the wafer.

108. A method as defined in claim 107 wherein the aqueous solution is water.

109. A method as defined in claim 107 wherein the aqueous solution includes an acid.

110. A method as defined in claim 107 wherein the aqueous solution is sprayed onto the surface of the wafer to form a thin aqueous film thereon.

111. A method as defined in claim 107 wherein the ozone is admixed with a carrier gas.

112. (Amended) A method for cleaning semiconductor wafers to remove organic materials from the surface thereof comprising:

- D3
- (a) spraying onto the surface of a rotating wafer a heated aqueous solution and simultaneously contacting the wafer surface with ozone to effect oxidation of the organic materials on the surface of the wafer to oxidize said contaminants; and
  - (b) removing from the surface of the wafer oxidized contaminants.

113. A method as defined in claim 112 wherein the aqueous solution is water.

114. A method as defined in claim 112 wherein the aqueous solution contains an acid.

115. A method as defined in claim 112 wherein the aqueous solution is sprayed onto the surface of the wafer to form a thin aqueous film thereon.

116. A method as defined in claim 112 wherein the oxidized contaminants are removed from the surface of the wafer by rinsing the wafer surface.

D4

117. (New) A method of cleaning a semiconductor article, comprising the steps of:  
rotating the article;  
spraying the rotating article with a heated aqueous solution and simultaneously contacting the article with ozone in an amount sufficient to oxidize contaminants on a surface of the article; and  
rinsing the article.

118. (New) A method of cleaning a semiconductor article, comprising the steps of:  
rotating the semiconductor article within a gas or air environment;  
applying a heated aqueous solution to the rotating semiconductor article;  
simultaneously contacting the article with ozone in an amount sufficient to oxidize  
contaminants on a surface of the article; and  
rinsing the article.

D4  
Sub 617  
119. The method of claim 118 wherein the ozone is provided as a gas around the  
semiconductor article.

120. The method of claim 118 wherein the ozone is provided in an ozone/liquid  
solution.

121. The method of claim 120 wherein the ozone/liquid solution is supplied separately  
from the heated aqueous solution.